departing from the present invention. Such variations are contemplated and considered equivalent.

Software code and/or data embodying certain aspects of the present invention may be present in any computer readable medium, transmission medium, storage medium or propagation medium including, but not limited to, electronic storage devices such as those described above, as well as carrier waves, electronic signals, data structures (e.g., trees, linked lists, tables, packets, frames, etc.) optical signals, propagated signals, broadcast signals, transmission media (e.g., circuit connection, cable, twisted pair, fiber optic cables, waveguides, antennas, etc.) and other media that stores, carries or passes the code and/or data. Such media may either store the software code and/or data or serve to transport the code and/or data from one location to another. In the present exemplary embodiments, MPEG compliant packets, slices, tables and other data structures are used, but this should not be considered limiting since other data structures can similarly be used without departing from the present invention.

While the invention has been described in conjunction with specific embodiments, it is evident that many alternatives, modifications, permutations and variations will become apparent to those skilled in the art in light of the foregoing description. Accordingly, it is intended that the present invention embrace all such alternatives, modifications and variations as fall within the scope of the appended claims.

What is claimed is:

1.      A method of content substitution, comprising:

receiving data representing video content, the data having at least first and second packet identifiers (PIDs) associated with a first and a second macroblock of content;

5           initiating processing of content having the first PID;

determining that a substitution criterion has been met;

substituting the macroblock having the second PID for the macroblock having the first PID; and

processing the substituted content.

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2.      The method according to claim 1, carried out in a decoder forming a part of a television Set-top box.

3.      The method according to claim 1, carried out in a hardware state machine.

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4.      The method according to claim 1, carried out in a programmed processor.

5.      The method according to claim 1, wherein the substitution criterion is met as a result of receipt of a flag.

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6.      The method according to claim 1, wherein the substitution criterion is met as a result of an operator input.

7.      The method according to claim 1, wherein the processing comprises playing

25    the content.

8.      The method according to claim 1, wherein the substituting comprises using private signaling to select the macroblock of content with the second PID and discarding the macroblock of content with the first PID.

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9.    The method according to claim 1, wherein the substituting comprises using private signaling to select the macroblock of content on the second PID while receiving the macroblock with the first PID.

10.    The method according to claim 1, wherein substituting is initiated and terminated by private signaling forming part of an adaptation layer of packets in a data stream.

11.    The method according to claim 10, wherein the adaptation layer is in a packet with the second PID.

12.    The method according to claim 10, wherein the adaptation layer is in a packet with the first PID.

13.    The method according to claim 10, wherein the adaptation layer is in a packet that is neither the second nor the first PID.

14.    A computer readable medium storing instructions which, when executed on a programmed processor, carry out the content substitution method according to claim 1.

15.    A method of content substitution, comprising:

receiving data representing content, the data having at least primary and secondary packet identifiers (PIDs) associated with a first and a second macroblock of content;

5          placing content having the primary PID into a data stream;

receiving an initiation flag indicating initiation of a PID mapping operation;

mapping content having the secondary PID to the primary PID and placing the mapped content into the data stream;

receiving a termination flag indicating termination of the PID mapping

10  operation; and

continuing to place content having the primary PID into the data stream.


16.    The method according to claim 15, carried out in a decoder forming a part of a television Set-top box.

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17.    The method according to claim 15, carried out in a hardware state machine.


18.    The method according to claim 15, carried out in a programmed processor.


20   19.    The method according to claim 15, wherein the substitution criterion is met as a result of receipt of a flag.


20.    The method according to claim 15, wherein the substitution criterion is met as a result of an operator input.

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21.    The method according to claim 15, wherein the substituting comprises using private signaling to select the macroblock of content with the secondary PID and discarding the macroblock of content with the primary PID.


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22. The method according to claim 15, wherein substitution is initiated and terminated by private signaling forming part of an adaptation layer of packets in a data stream.

23. The method according to claim 22, wherein the adaptation layer is in a packet with the one of the primary PID and the secondary PID.

24. The method according to claim 22, wherein the adaptation layer is in a packet that has neither the secondary nor the primary PID.

25. A computer readable medium storing instructions which, when executed on a programmed processor, carry out the content substitution method according to claim 15.

26. A content substitution encoder, comprising:

means for receiving input data representing at least one macroblock of main content;

means for receiving input data representing at least one macroblock of substitution content;

a packet identifier (PID) mapper that assigns a primary PID to the main content and assigns a secondary PID to the substitution content;

a private data generator that generates user private data that identifies the main content by the primary PID and substitution content by the secondary PID; and

means for assembling the private data, the main content mapped to the primary PID and the substitution content mapped to the secondary PID into a data stream.


27. The content substitution encoder according to claim 26, implemented using a programmed computer.

28.    A decoder, comprising:

a receiver receiving data that represents content, the data having at least first and second packet identifiers (PIDs) associated with a first and a second macroblock of content;

5          a content decoder configured to play content having the first PID;

a controller that determines that a substitution criterion has been met; and

a PID mapper that maps content having the second PID to the first PID so that the content originally having the second PID is played.


10   29.    The decoder according to claim 28, wherein the decoder resides in a television Set-top box.


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